

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Thomas M. Hunter on 8-19-10.

1. (currently amended): A method for removing mercury from a fluid stream, comprising the steps of:

providing a composite material comprising a substrate and catalyst particles; and contacting a fluid stream with said composite, wherein said composite adsorbs and/or

~~oxidizes~~ said mercury,

wherein the catalyst particles are homogeneously dispersed both in the solid portions of the substrate and on the surface portions the substrate,

the substrate is ~~selected from any one of silica-gel, activated carbon or a zeolite,~~ and

the catalyst is selected from any one of TiO<sub>2</sub>, HgO, ZnO, V<sub>2</sub>O<sub>5</sub>, SnO<sub>2</sub>, modified TiO<sub>2</sub> coated with Pt or other conductive materials.

Claims 3 and 4 have been canceled.

5. (currently amended): The method of claim [4] 1 wherein said silica gel is an xerogel.

6. (currently amended): The method of claim 1, further comprising the step of oxidizing said mercury adsorbed on said composite by irradiating said composite material with radiation.

9. (currently amended): The method of Claim 8, wherein said substrate comprises porous silica gel.

11. (currently amended) The method of Claim 3 1, wherein said sorbent substrate has a surface area (BET) of about 1 to about 1500 m<sup>2</sup>/g.

Claims 15-24 have been canceled.

Paragraph 37 has been amended as follows:

-- [37] The chemicals were reagent grade and were added individually, in no particular order, to a polymethylpentene container. During this time, a known mass of Degussa (Dusseldorf, Germany) P25 TiO<sub>2</sub> was added to the batch and the percentage of titania recorded is given as a percent by weight of silica. A magnetic stir plate provided sufficient mixing, but care should be used to insure that the TiO<sub>2</sub> is well dispersed in the sol and that the homogeneous distribution of TiO<sub>2</sub> is maintained

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throughout the gelation process. Accordingly, the catalyst particles are homogeneously dispersed both in solid portions of the substrate and on surface portions of the substrate. The solution (including the P25) was pipeted into polystyrene 96-well assay plates before complete gelation. The volume added to each well was approximately 0.3 ml. After gelation, the plates were then covered with lids and wrapped in foil to prevent premature evaporation. Next, the sample was aged at room temperature for two days, then at 65°C for two days. --.

The title has been changed to –METHOD FOR MERCURY CAPTURE FROM FLUID STREAMS--.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew O. Savage whose telephone number is (571) 272-1146. The examiner can normally be reached on Monday-Friday, 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Matthew O Savage/  
Primary Examiner  
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